



Hearing Screening Guide

Sound Scouts is supported by:



Australian Government
Department of Health



Hearing Australia

Table of Contents

- 01 Who can use the Sound Scouts test?
- 02 Why are hearing checks important for children?
- 02 Types of hearing loss
- 03 What you will need
- 04 Choosing the right headphones
- 05 Setting up the screening environment
- 06 Supervising a Sound Scouts Test
- 08 How is the Sound Scouts hearing test structured?
- 09 Script examples for parents and carers
- 10 After the test
- 11 Understanding results
- 12 Failing the screening- next steps
- 13 Things to consider before testing with Sound Scouts

Who can use the Sound Scouts test?

Sound Scouts is suitable for children 4 years and above. Sound Scouts is now free for all Australian schoolchildren aged 4-17 thanks to support from Hearing Australia and the Australian Government Department of Health. The Sound Scouts test can be supervised by any adult with known good hearing. Sound Scouts can also be used to test the hearing of adults.



Why are hearing checks important for children?



An estimated **1 in 10 children** suffer from hearing loss which left undetected can lead to speech, learning and behavioral problems.

The World Health Organisation recommends that **all children should have their hearing screened around the time they start school.**



- Every child starting school should have their hearing tested.
- Any child identified with learning or behavioral problems should have their hearing tested.

Types of hearing loss

Conductive hearing loss (middle ear) occurs when something interferes with sound travelling to the inner ear. Usually temporary, it's often caused by fluid from middle ear infections but can also result from ear wax build-up or a foreign object lodged in the ear canal.

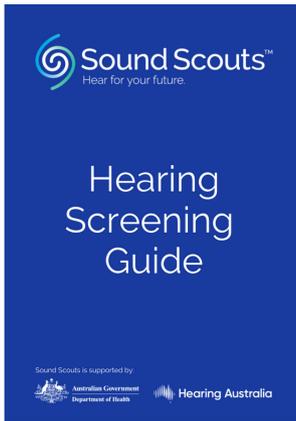
It's estimated that around four out of five children will experience a middle ear infection at least once. Hearing loss can occur even after symptoms resolve because fluid can remain in the ear.

Sensorineural hearing loss (inner ear) results from damage to the inner ear and is permanent. It's often present from birth but can also be acquired through exposure to loud noise, some medicines, some viral infections, and head injuries. It exists on a spectrum, ranging from mild to profound. Hearing aids, or for those with profound loss, Cochlear implants, can reduce the impact of a hearing loss.

Difficulty Hearing in Noise is a hearing issue than can occur despite a person receiving normal results in an audiogram. While hearing in quiet may be normal, hearing in noisy environments, such as the classroom or a restaurant, may be extremely difficult.

Difficulty hearing in noise can be caused by a number of things including (but not limited to): auditory processing disorder, a developmental delay, a language issue, attention deficit and english as a second language (or bi-lingual/multilingual capabilities).

What you will need



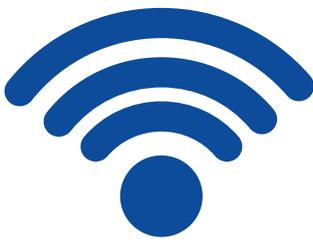
The Sound Scouts
Hearing Screening Guide



Good quality adult
headphones or earbuds



Apple or Android tablet or
smartphone loaded with the
Sound Scouts App



Internet access



A quiet space



Approximately ten minutes

WARNING: Using suitable good quality adult headphones or earbuds is vital to ensuring that the Sound Scouts test results are reliable.

Choosing the right headphones

Choosing the right headphones and using them in the correct way is an important part of ensuring a reliable result when screening with Sound Scouts.



Use good quality adult headphones.



Do not use gaming or surround sound headphones.



Do not use a splitter as they can reduce the sound levels heard by the person being tested.



Earbuds can be used when screening at home. Ensure earbuds are good quality and fit well.



Sound Scouts recommends:

Sennheiser HD 300 Headphones

Sennheiser HD 300s are over-ear headphones.

Setting up the screening environment



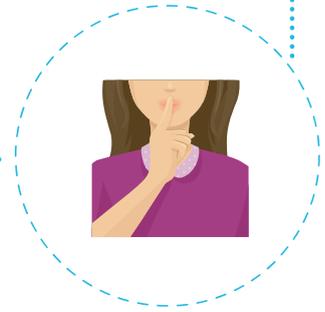
1 Download Sound Scouts to an Apple or Android tablet.

Ensure devices are fully charged, have notifications switched off and have the latest version of Sound Scouts downloaded from the App Store or Google Play.



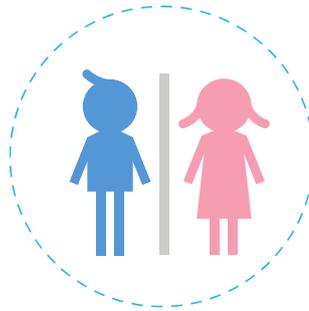
2 Use good quality adult headphones.

Please read our guidance on 'Choosing the right headphones.' Ensure headphones are plugged in properly before getting started. Bluetooth headphones can be used.



3 Test in a quiet place

Test in a quiet indoor space that's free from distractions. Noisy air conditioners or appliances may impact the results.



4 Ensure children are ready to focus

Before starting the test make sure children have been to the bathroom and have blown their nose.



5 Don't test children late at night

It's important that children are well rested when taking the test. We recommend that children are not tested after a busy day at school or late at night.



6 Set up the space to minimise distraction

Make sure the space is free from distractions. Turn the television and other screens off.

Supervising a Sound Scouts test



1 Set the volume to maximum

Before starting a test set the volume to maximum or to the highest comfortable listening level.



2 Start a New Session

To begin go to **New Session**. Read and carefully follow the instructions on each page.



3 Supervisor setup

Supervising adults must complete a short game-based activity. This activity helps to calibrate the sound levels.



4 Player setup

Select Create Player. Enter a Player ID and email address. Sound Scouts results will be sent to this email address.



5 Explain to children how the game works

Tell the child that the sounds will get quieter, and sometimes they may not be able to hear anything and that this is OK. Advise them to wait and only tap the screen when they hear the sounds.



6 Ask the child to select the five words they know best

When selecting the words for the first activity we recommend the child says each word out loud. The Supervisor should guide them to choose the five items with which they are most familiar.



7

Trial Run

Use the Trial Run to ensure that the child understands how to interact with the three test activities. Do not test a child if they cannot complete the trial activities.



8

Headphones

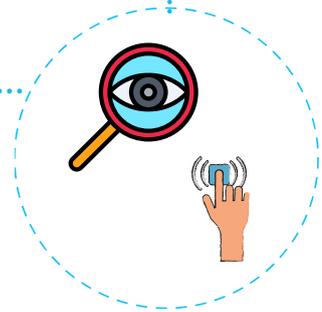
The children should be using the same headphones as those used by the Supervising adult. Ensure the headphones are sitting correctly on or over the ears.



10

Intervene if the child is not interacting

If the child is not responding you can listen in, or ask them what they hear, and tap or slide the matching object for them. Demonstrating once or twice should be enough to prompt play. If further assistance is required, exit the test and use the Trial Run with the headphones out to deliver further explanation.



9

Supervisors should supervise

During the test supervisors should watch for on screen alerts. They should also watch to ensure the child isn't tapping repeatedly when no sounds are presented. Supervisors can prompt players to only tap when they hear a sound.



11

To exit the test without closing the app

To stop and exit the test, tap the screen three times in the top right hand corner. This may be necessary if the test is interrupted by persistent loud noise or the child is unwilling to complete the test.

How is the Sound Scouts hearing test structured?

Sound Scouts incorporates three separate test activities in the same 8 minute game. Each Player's results are compared with the results of players of the same age with normal hearing.

Part One: Speech-in-Quiet (Calibration)

- Adult with good hearing completes a short game based activity to help establish sound levels for the test.
- Supervising adult guides the child to select 5 items they recognise visually and verbally (adult can ask the child to say each word out loud). Child can select from 10 items.
- Child can tap or slide the spoken 'target' item into the scene .
- Items become progressively harder to hear until the child reaches their threshold ie. the lowest volume at which they can hear.

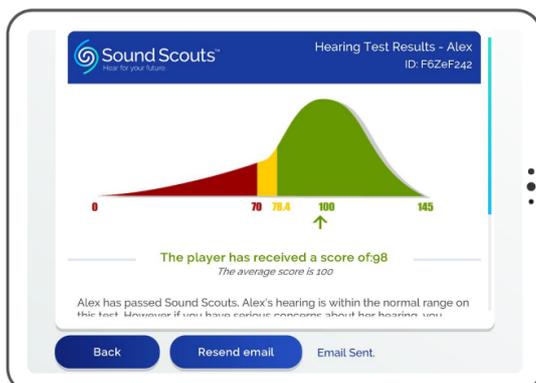


Part Two: Tone-in-Noise

- Children are asked to listen for the beep from a 'helicopter's sound tracker' and to press the red button when they hear the sound.
- The children are visually rewarded when they correctly identify the sound.
- The test ends when the child reaches their threshold and maintains consistent responses for a period of time OR after the set maximum number of presentations is made.

Part Three: Speech-in-Noise

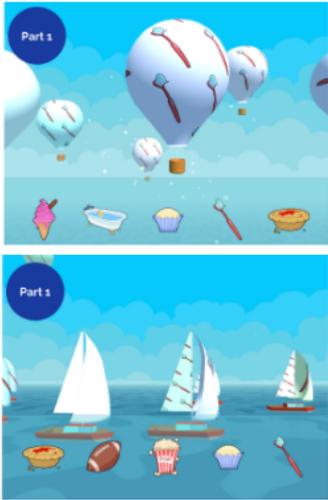
- Children are asked to listen to the spoken words and then drag the corresponding target item into the scene.
- There is background dialogue throughout this section. The player must focus on the target items, which become increasingly difficult to hear against the background noise.
- This test assesses the players ability to hear in noise. Some children may be able to hear in quiet but due to language, concentration or processing issues, they may struggle to hear in noise.



Results

- When the child finishes the game the test results are immediately returned to the supervising adult on the device and via email.
- The child's results are assessed against normal results for children of the same age.
- Please **RETEST** your child if they receive a 'Fail' or 'Borderline' result before taking further action.

Script examples for parents and carers

	<p>"In this game, we have to practice good listening. So, as soon as I put the headphones on, or you put on your headphones, neither of us can talk. We both have to try and be as quiet as we can!"</p> <p>OR</p> <p>"You're going to play a listening game, so you have to listen carefully for the special sounds."</p>
	<p>"In the first game, there are hot air balloons, and the lady will say the name of a picture and you have to drag it up onto the balloon.</p> <p>Sometimes her voice will be loud, and sometimes it will be VERY quiet. Sometimes, she will even try and trick you and she won't say anything at all! If you can't hear her say a word – don't press anything, just wait until you hear the next word.</p> <p>After the hot air balloons finish, the same thing will happen with some sailing boats."</p>
	<p>"In the 2nd game, there is a helicopter searching through the forest for hidden animals. When the helicopter sees one, it will make a funny noise, like this [make noise]. As soon as you hear that funny noise, press the red button and it will show you the animal you found! Only press the red button if you hear the noise."</p>
	<p>"In the third game, there are going to be lots of voices because a radio is playing. Someone will tell you the things they are missing. When you hear the name of something, drag it up from the bottom into the picnic area."</p>
	<p>"Sometimes, when you're playing the game, you might see a picture of a lady that looks like this [demonstrate pose with hand behind ear]. If you see this picture, try to listen more carefully."</p>

After the test



1 Results are delivered immediately

You can view the results on the device and they will also be automatically emailed to the address entered at the beginning.



2 We suggest an adult reviews results before they are shared with the child.

We suggest not sharing results with your child until you have had a chance to review them.



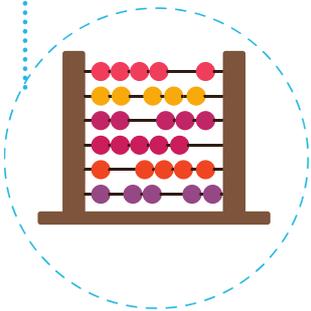
4 Stored results can be accessed through 'Past Sessions'

To retrieve a session go to 'Past Sessions,' select the session and if a connection is available the results will be processed.



3 If you don't receive results...

If the device is not connected to a Wi-Fi network the test data will be stored and can be processed when a connection becomes available. You will not receive results until you connect to Wi-Fi. Phone hot spots can be used.



5 Incomplete session

Results won't be processed if the Player does not complete all three activities.



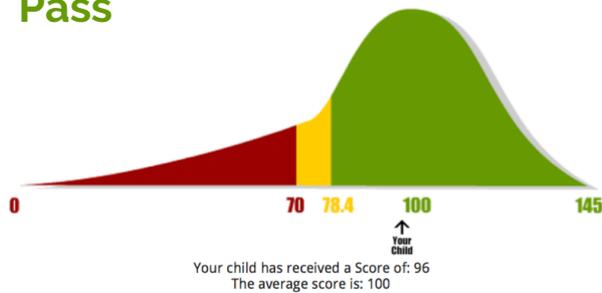
6 Read the report carefully and follow the next steps

If a child receives a fail or borderline result please **RETEST** after 24 hours. Follow the recommendations in the report unless advised otherwise by the Sound Scouts team.

Understanding results

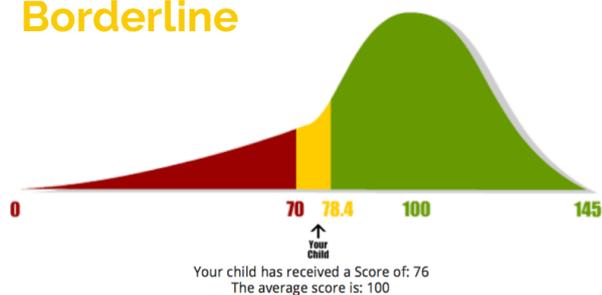
When the hearing check is complete a report is automatically generated. The report is viewable on the device and is also sent via email (when an address is provided).

Pass



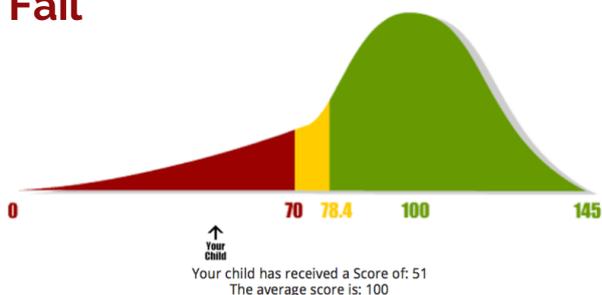
If the child receives a **Pass** the Report will state that the child has passed the Sound Scouts hearing check. This means that the child's results are within the normal range for children of the same age. If you have ongoing concerns about the child's hearing we strongly recommend seeing your doctor or a hearing professional.

Borderline



If the child receives a **Borderline** result, hearing may be on the edge of normal. When a Borderline result is received it is recommended that the child is retested after 24 hours. If the child receives a similar result further investigation may be necessary.

Fail



If the child receives a **Fail** result, we recommend retesting after 24 hours. If the child receives a second Fail result, then further diagnostic assessment is recommended.

NB: If there are reservations about the result i.e. the result is not in line with other indicators, we recommend re-testing or seeking further diagnostic assessment.

Failing the Screening - Next Steps

Children who fail the hearing screening may be flagged as having an issue in one of the following areas:

Middle ear (Conductive hearing loss)

If the child receives a fail result with an indication of a middle ear, or conductive hearing loss Sound Scouts recommend that the carer follow up with a visit to their doctor. A middle ear issue may be caused by things such as a build up of wax or fluid, and in most cases, with the appropriate treatment, hearing will return to normal.

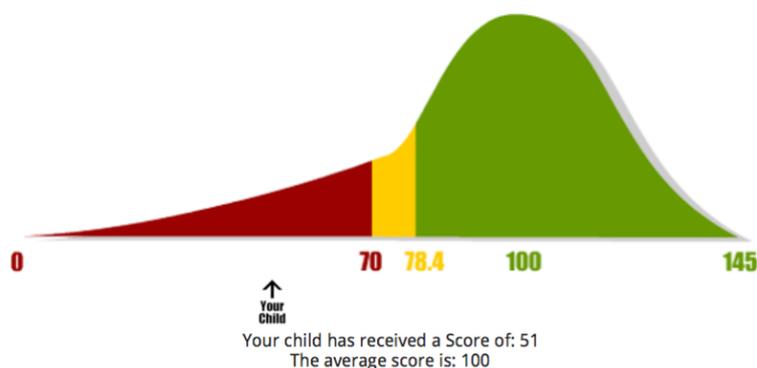
Inner ear (Sensorineural hearing loss)

If the child receives a fail result with an indication of an inner ear, or sensorineural hearing loss, the report recommends follow up with Hearing Australia or an audiologist for further evaluation.

Difficulty Hearing in Noise

If the child receives a fail result with an indication of difficulty hearing in noise, the possible causes need to be considered. Difficulty hearing in noise can be caused by poor attention, language disorders, English as a second language (ESL or EAL/D) and Auditory Processing Disorders (APDs), which are related to the brain's ability to process sounds. Children who experience difficulty hearing in noise can typically hear in quiet environments but struggle in noisy environments like the classroom or playground. By determining the most likely possible cause, the child's care team can determine who best to see for further assessment.

A Sound Scouts fail result indicating sensorineural loss or difficulty hearing in noise is accepted as a referral for the purpose of obtaining an appointment with Hearing Australia.



Things to consider before testing with Sound Scouts

Children who can not independently do the Trial Run activities should NOT be tested with Sound Scouts. In relation to children with cognitive issues Supervisors should confirm that they are able to successfully complete the Trial Run activities before undertaking a full test.

If English is not the child's primary language (ie ESL or EAL/D), to complete Sound Scouts, the Supervisor must determine if the child can identify 5 words from the list of 10 spondee items. Provided they can identify 5 words (we suggest they say them out loud) then they should be able to undertake the test. For these children please use the Trial Run with the headphones OUT to ensure they understand each of the three activities. You may need to repeat several times.

The second activity, the helicopter game, is largely language independent so provided the children understand what to do ie tap the red button when they hear the stimuli (target sound), they will be able to complete this activity.

If the children can do the first two activities it should be possible to determine if they have a hearing loss.

It is likely children who speak English as a second language may get a borderline or fail result due to the final listening in noise activity. This is a common outcome and is due to the children having to process complex audio, bilingually. The child's Report will note that the child has received a result 'outside the normal range due to difficulty hearing in noise' which can be caused by the child speaking more than one language.

For reference there is a list of the speech in noise target items attached which can be used to assist ESL children in reviewing the items prior to testing. Be careful not to over-expose children to the target words.

If the children CAN NOT identify 5 words then it's best to wait until they can or seek another type of hearing assessment.



'Sound Scouts identified a hearing issue in my son, which we followed up on with a hearing specialist. He was recommended a hearing aid system which he wore to school for the first time today. I have a different boy tonight. After school he is usually cranky and on edge and needs to be alone. Today he was relaxed, happy and joking around. He said he could hear the instructions in music class for the first time ever.'

Gemma, Parent



Need more information?

 team@soundscouts.com.au

 [Sound Scouts](#)

 [@SoundScoutsGame](#)

 www.soundscouts.com.au